

“Productive Questions” -- Sample Questions



Attention-focusing questions:

1. Using the senses, how would you describe the melting ice in the bag?
2. What do you notice when two toy cars collide?

Measuring and counting questions:

3. How much will the mass of lemonade increase with the addition of 50 grams of sugar?
4. How long will a vehicle roll (measured in seconds) after leaving a ramp to a flat surface?
5. How far will a vehicle roll (measured in cm) on different surfaces after leaving a ramp?

Comparison questions:

6. What is similar about an object that is speeding up and an object that is slowing down?
7. What was similar/different about the force and motion of the two cars?

Action questions:

8. What would happen if you placed two different colors drops of food coloring at opposite ends of a pan of cold water?
9. What will happen if you add more mass to a car on a ramp?

Problem-posing questions:

10. How would you change a flexible ramp to increase or decrease the toy car speed?
11. How would you find a way to measure the amount of helium in a balloon?

Reasoning questions:

12. Explain why Joe's body mass changed from 130 $\frac{1}{2}$ pounds to 130 $\frac{3}{4}$ pounds after eating a plain quarter-pounder (assume the burger's mass doesn't change during cooking) on a hamburger roll. He didn't order any fries or drink.
13. What is your reason for explaining why a soccer ball begins to slow down and return to the ground after being kicked into the air by the goalie?

Metacognitive questions:

14. As a result of this investigation, what important discoveries have you made?
15. Based on what you have learned through this investigation, what might be the next question you would investigate?